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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------------|-------------|----------------------|---------------------|------------------|
| 10/809,203 | 03/25/2004 | Toshimitsu Hirai | 9319S-000716 | 5989 |
| 27572 | 7590 | 09/06/2006 | EXAMINER | |
| HARNESS, DICKEY & PIERCE, P.L.C. | | | KIM, SU C | |
| P.O. BOX 828 | | | ART UNIT | |
| BLOOMFIELD HILLS, MI 48303 | | | PAPER NUMBER | |
| | | | 2823 | |
| DATE MAILED: 09/06/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/809,203 | Applicant(s) HIRAI, TOSHIMITSU | |
| | Examiner Su C. Kim | Art Unit 2823 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 9-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 9 and 10 is/are rejected.
- 7) ☒ Claim(s) 2-4, 12 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>6/20/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment was received on 6/22/2006, and has been entered and made of record. Currently claims 1-5, 9-10, & 12-13 are pending.

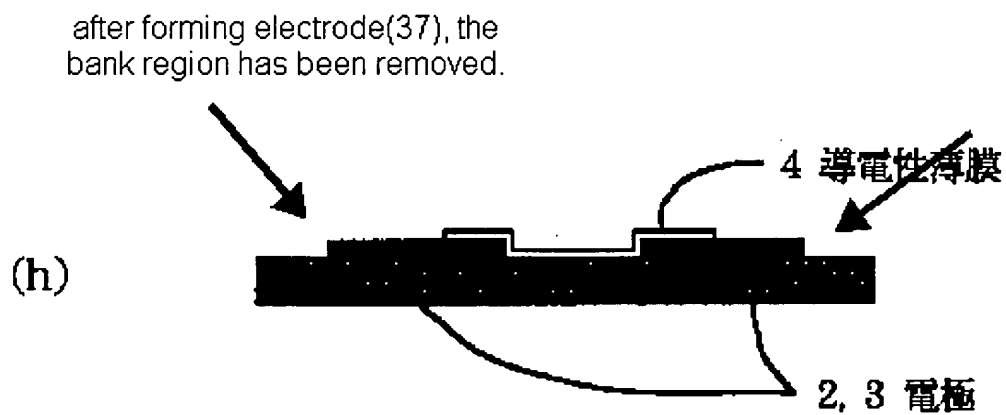
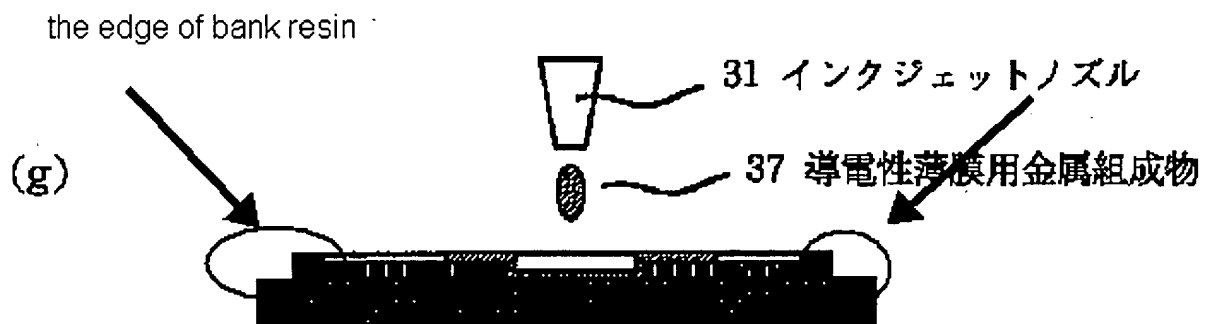
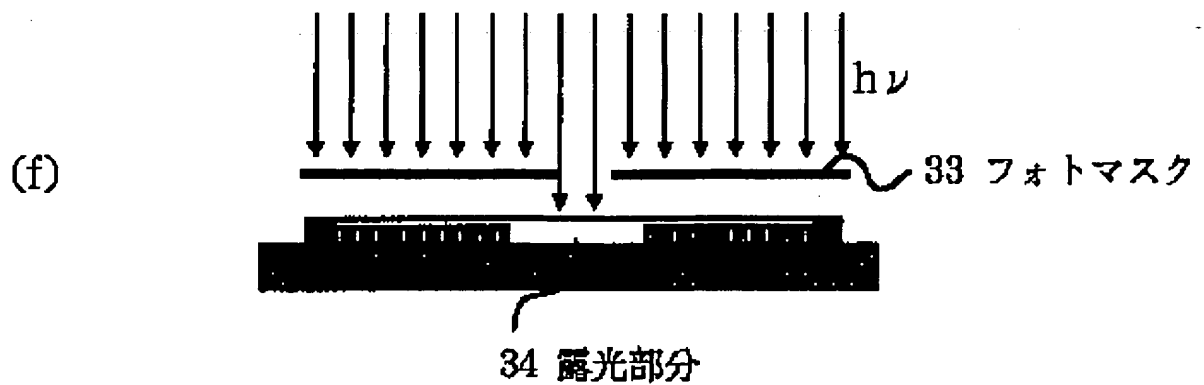
Response to Arguments

2. With respect to claims rejection under 35 U.S.C. 102(b), applicant amended new claim limitation(s) that " and a step of removing the banks" as recited in claim 1 and "removing the bank after the conductive layer and element electrodes are formed" as recited in claim 9. However, new claim limitation(s) does not overcome the rejection under the 35 U.S.C102(b) with Kamishiro Kazuhiro (JP 2000-243254, hereafter Kamishiro)

Kamishiro discloses removing banks (Drawing 2(a), Resin constituent layer 32) after the conductive layer (Drawing 2 (d), Metal constituent for electrodes 35) and element electrode are formed as seen in Drawing 3(g)-3(i)

Kamishiro discloses a step of removing banks in Drawing 3(f) – 3(i) below

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Therefore, the rejection of claims 1 and 9 under 35 U.S.C. 102(b) is deemed proper.

In addition, for the rejection of claims 2-5 & 10,12, & 13 the *prima facie* case of obviousness has been met and the rejection under 35 U.S.C. § 103 is deemed proper.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 5, 9, 10, & 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamishiro Kazuhiro (JP 2000-243254) ('hereafter Kamishro')

Pertaining claim 1, Kamishro discloses a method for manufacturing electron emitters by providing pairs of element electrodes, and conductive layers (Drawing 3(h), 2 & 3) connecting the element electrodes (Drawing 3(h), 5) to each other on a substrate (Drawing 2(a), 1), the method comprising:

a step of forming banks (Drawing 2(a)-(c), 34) surrounding electrode-forming regions for forming the element electrodes (Drawing 3(h), 2 & 3) and conductive layer-forming regions 4 for forming the conductive (Drawing. 2 & 3)

a step of discharging first droplets toward the electrode-forming regions (Drawing 2 (a)-2(e));

and a step of discharging second droplets toward the conductive layer-forming regions (Drawing 3-(g)); and

a step of removing bank(Drawing 3(g)-3(i))

Pertaining claim 5, as applied to claim 1, Kamishro discloses an electron emitter manufactured by the method according to claim 1. (See the rejection on claim 1)

Pertaining claim 9, Kamishro discloses a method for manufacturing an electron emitter comprising:

defining a pair of spaced apart electrode (Drawing 3(i), 2 & 3) forming regions on a substrate (Drawing 2 (c)-(d));

defining a conductive layer-forming region on the substrate, the conductive layer 4 forming region interconnecting the electrode-forming regions (Drawing 3 (h));

forming a bank (Drawing 2(c), 32) encircling the electrode-forming regions and the conductive layer forming region (Drawing 2(c)) ;

discharging first droplets (Drawing 2(d), 35) toward the electrode-forming regions to form a pair of element electrodes (Fig. 2 (e)); and

discharging second droplets (Drawing 3(g), 37) toward the conductive layer-forming regions to form a conductive layer connecting the element electrodes to each other (Drawing 3(g)); and

removing the bank after the conductive layer and element electrodes are formed(Drawing 3(f)-(i) and details on paragraph 2 above)

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Pertaining claim 10, as applied to claim 9 above, Kamishiro discloses the method of claim 9, further comprising treating a portion of the conductive layer (Drawing 3(g), 4) to form an electron-emitting section (Drawing 3(g), 5).

Allowable Subject Matter

5. Claims 2-4 & 12-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Su C. Kim whose telephone number is (571) 272-5972. The examiner can normally be reached on Monday - Thursday, 9:00AM to 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


BROOK KEBEDE
PRIMARY EXAMINER

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Su C. Kim
8/28/2006